Introduction to the Built Environment

Course Description

This course provides the skills and technical knowledge for a beginning student in areas of industry, safety, material, equipment and process understanding. The student will develop awareness construction, design, and manufacturing areas. This course serves as an introductory course to material processing and drafting.

Course Code: 100100

Program(s) of Study to which this course applies:

- Manufacturing process development
- Manufacturing production
- Construction
- Design/Pre-construction

Course Content	CTE Reference Standards	Crosswalk to Common Core Academic Standards	Crosswalk to Nebraska Academic Standards	Crosswalk to Nebraska Career Readiness Standards	Crosswalk Clarification
Standard 1. Students will understand and model safe lab procedures and techniques.	KS - MNC06				
Benchmark 1.1 The student will successfully pass safety requirements. Sample performance indicators: • Complete a safety test with 100% accuracy. • Sign a safety contract.	KS - MNC06.03.01	N/A	N/A	CR.3.B.4	
Benchmark 1.2 The student will practice industry required safety.	KS - MNC06.04	ELA.RST.11-12.3	LA.12.3.2 LA.12.1.6.k6	CR.1.A.4 CR.3.B.4	Alignment presumes that students must comprehend

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Sample performance indicators: ● Demonstrate safe tool operation. ● Demonstrate proper use of safe personal protection equipment. ● Operate and maintain a safe working environment. ● Demonstrate proper storage and handling of materials.					oral or written instructions to complete the task. (CC: ELA.RST.11-12.3; NE: LA.12.3.2, LA.12.1.6.k).
Standard 2. Students will understand and accurately apply measurement.					
Benchmark 2.1 The student will understand fraction, decimal and conversions. Sample performance indicators: ● Read a ruler to an accuracy of 1/16”. ● Convert a fraction to a decimal and vice versa. ● Convert inches to mm and vice versa. ● Manipulate fractions accurately.	KS - MNC10.01.01	NA	MA.12.2.5.c	NA	Alignment presumes that students will use conversions on units of area and volume, such as square feet to square yards (NE: MA.12.2.5.c).
Benchmark 2.2 The student will use basic visual communication skills to sketch an object. Sample performance indicators: ● Complete orthographic sketch(s). ● Complete isometric sketch(s).	KS - MNC10.01.01	ELA.WHST.11-12.6 MTH.G.MG.1	LA.12.2.1.f MA.12.2.4.a	NA	

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Benchmark 2.3 The student will interpret basic prints. <u>Sample performance indicators:</u> ● Identify different types (alphabet) of lines, dimensions, symbols, and views. ● Interpret needed information from a drawing.	KS - MNC10.01.01	ELA.RST.11-12.7 MTH.G.MG.1	LA.12.1.6.f MA.12.2.4.b	CR.1.A.4	
Standard 3. Students will select the appropriate fasteners/adhesives.	KS - MNC10.01.03				
Benchmark 3.1 The student will distinguish different types of fasteners and adhesives. <u>Sample performance indicators:</u> ● Classify fasteners for different applications. ● Classify adhesives for different materials.	KS - MNC10.01.03	ELA.RST.11-12.4	LA.12.5.1.a	NA	
Benchmark 3.2 The student will choose different types of fastener and adhesive based on application. <u>Sample performance indicators:</u> ● Select fasteners for different applications. ● Select adhesives for different applications.	KS - MNC10.01.03	N/A	N/A	CR.4.B.3	
Standard 4. Students will understand material types and properties.					

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Benchmark 4.1 The student will identify different types of materials. Sample performance indicators: ● Identify materials. ● Identify properties. ● Identify material applications.	KS - MNC10.01.02	ELA.RST.11-12.4	LA.12.5.1.a	NA	
Standard 5. Students will process material.					
Benchmark 5.1 The student will separate material. Sample performance indicators: ● Demonstrate cutting processes. ● Demonstrate drilling/boring. ● Demonstrate sanding/grinding.	KS - MNC10.01.02	ELA.RST.11-12.3	LA.12.3.2 LA.12.1.6.k	CR.1.A.4	Alignment presumes that students must comprehend oral or written instructions to complete the task. (CC: ELA.RST.11-12.3; NE: LA.12.3.2, LA.12.1.6.k).
Benchmark 5.2 The student will form material. Sample performance indicators: ● Demonstrate forming processes.	KS - MNC10.01.02	ELA.RST.11-12.3	LA.12.3.2 LA.12.1.6.k	CR.1.A.4	Alignment presumes that students must comprehend oral or written instructions to complete the task. (CC: ELA.RST.11-12.3; NE: LA.12.3.2, LA.12.1.6.k).
Benchmark 5.3 The student will join material. Sample performance indicators: ● Demonstrate joining processes.	KS - MNC10.01.02	ELA.RST.11-12.3	LA.12.3.2 LA.12.1.6.k	CR.1.A.4	Alignment presumes that students must comprehend oral or written instructions to complete the task. (CC: ELA.RST.11-12.3; NE: LA.12.3.2, LA.12.1.6.k).

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Standard 6. Students will select tools for the correct operation.					
Benchmark 6.1 The student will identify tools. <u>Sample performance indicators:</u> ● Identify the tools. ● Inspect and report tool conditions.	KS - MNC10.01.02 KS - MNC10.01.03	ELA.RST.11-12.4	LA.12.5.1.a	NA	
Benchmark 6.2 The student will choose tools based upon the correct application. <u>Sample performance indicators:</u> ● Select and apply the appropriate tool. ● Perform preventive maintenance and repair tool.	KS - MNC10.01.02 KS - MNC10.01.03	N/A	N/A	CR.4.B.3	
Standard 7. Students will produce a product.					
Benchmark 7.1. The student will follow a plan to create a product. <u>Sample performance indicators:</u> ● Interpret the drawing. ● Prepare a plan of procedure. ● Create a Bill of Materials. ● Prepare a flowchart.	KS - MNC10.01.02 KS - MNC10.01.03	ELA.RST.11-12.3	LA.12.3.2 LA.12.1.6.k	CR.1.A.4	Alignment presumes that students must comprehend oral or written instructions to complete task. (CC: ELA.RST.11-12.3; NE: LA.12.3.2, LA.12.1.6.k).

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Benchmark 7.2. The student will process the product components. <u>Sample performance indicators:</u> ● Follow the plan of procedure.	KS - MNC10.01.04	ELA.RST.11-12.3	LA.12.3.2 LA.12.1.6.k	CR.1.A.4	Alignment presumes that students must comprehend oral or written instructions to complete the task. (CC: ELA.RST.11-12.3; NE: LA.12.3.2, LA.12.1.6.k).
Benchmark 7.3. The student will assemble the product. <u>Sample performance indicators:</u> ● Perform a rough assembly. ● Modify and complete final assembly.	KS - MNC10.01.05	ELA.RST.11-12.3	LA.12.3.2 LA.12.1.6.k	CR.1.A.4	Alignment presumes that students must comprehend oral or written instructions to complete the task. (CC: ELA.RST.11-12.3; NE: LA.12.3.2, LA.12.1.6.k).
Benchmark 7.4. The student will finish the product. <u>Sample performance indicators:</u> ● Prepare for the finish surface. ● Select and apply the appropriate finishing procedures.	KS - MNC10.01.04	ELA.RST.11-12.3	LA.12.3.2 LA.12.1.6.k	CR.1.A.4	Alignment presumes that students must comprehend oral or written instructions to complete the task. (CC: ELA.RST.11-12.3; NE: LA.12.3.2, LA.12.1.6.k).
Benchmark 7.5. The student will evaluate the product. <u>Sample performance indicators:</u> ● Compare the product to the plan. ● Assess quality of the product.	KS - MNC10.01.05	N/A	N/A		

Reference Standards Sources

- MNC = Career Clusters Knowledge and Skills Statements. Revised 2008. National Career and Technical Education Foundation, Silver Spring, MD. www.careerclusters.org.

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